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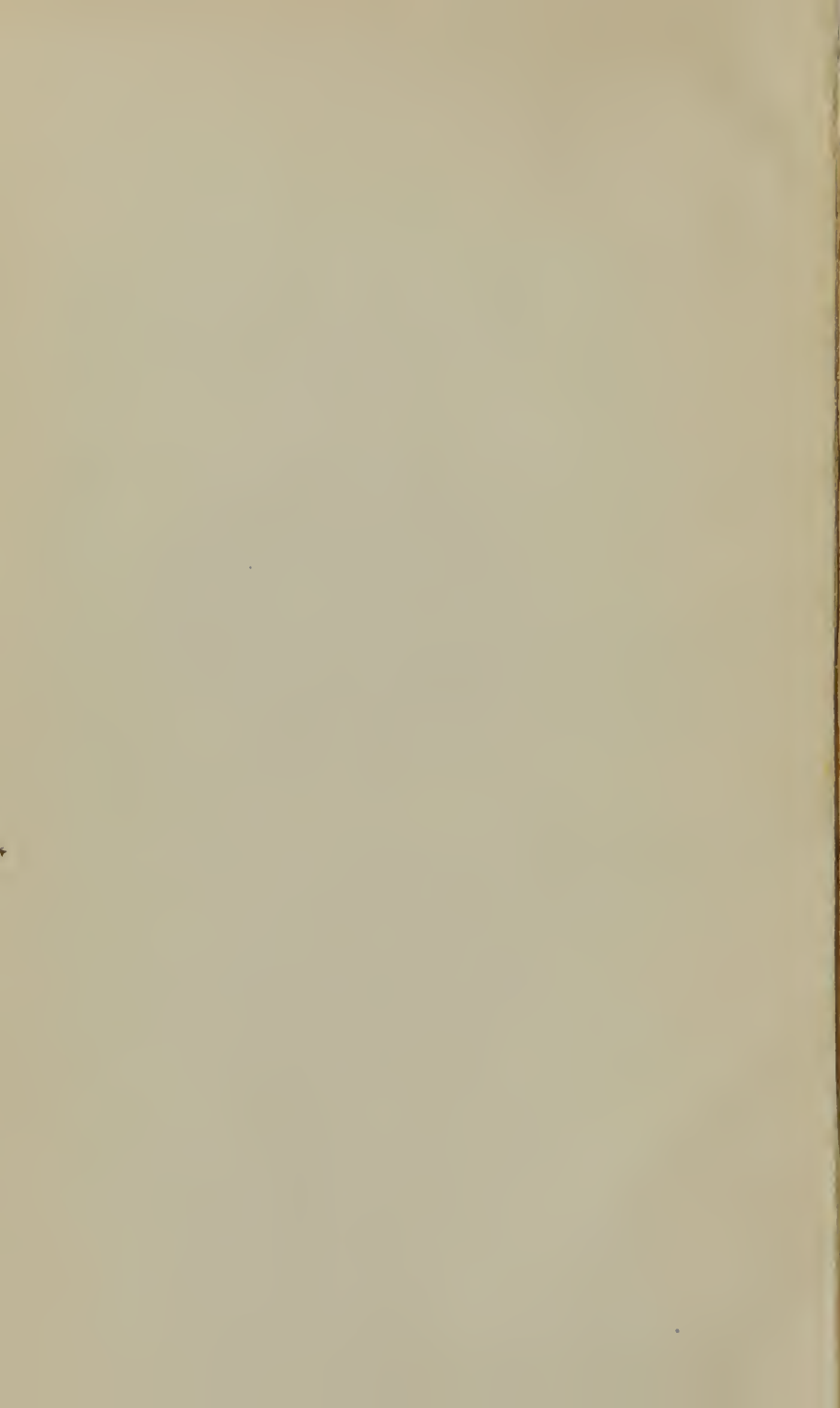


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REMARKS

CROUP AND ITS TREATMENT.

✓
BY HORACE GREEN, M. D. 1837-1886

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REMARKS

ON

CROUP AND ITS TREATMENT,

BY HORACE GREEN, M. D.

THE extent of the fatal cases of croup which have occurred among children, in the city of New York, during the last year, is almost without a parallel in the history of this affection.

The whole number of the fatal cases of this disease which, according to a statement furnished by the City Inspector, occurred in New York during the year ending February 28th, 1854, was *six hundred and eighty*! The subjoined table contains a statement of the number of deaths from croup, in each of the months of the above-mentioned year; and, also, columns to exhibit the relative proportion of males and females out of the six hundred and eighty fatal cases.

	Males.	Females.	Total.		Males.	Females.	Total.
1853. March.....	34.....	36.....	70	1853. October.....	38.....	43.....	81
“ April.....	29.....	26.....	55	“ November.....	31.....	39.....	70
“ May.....	27.....	22.....	49	“ December.....	47.....	42.....	89
“ June.....	28.....	14.....	42	1854. January.....	28.....	39.....	67
“ July.....	13.....	15.....	28	“ February.....	33.....	28.....	61
“ August.....	21.....	11.....	32				
“ September.....	15.....	21.....	36		344	336	680

Undoubtedly, this disease, like many others, is influenced by atmospheric peculiarities, so as to assume, occasionally, an epidemic character, and, in certain seasons, to exhibit a great increase in its prevalence. As the various forms of angina have been more or less aggravated during the past season, it is not improbable that atmospheric peculiarities have also served to increase the frequency of croup.

We have no means of comparing the preceding statement of the fatal cases of croup, with the statistics of deaths from this disease in other places during the same time; but, on referring to an article published in the London Medical Gazette for 1850* on the subject of croup, we find that, in a population nearly fourfold greater than that of this city,† the average number of deaths from croup, during a period of eight years, in London, was less than three hundred and eighty a year. The number of deaths from croup in the whole State of Massachusetts, in 1851, according to the Registration Report for that year, in a population, at that time, of about one million,‡ amounted to four hundred and eleven. During the same year, in Suffolk county (which county includes Boston, Chelsea, &c.), with a population amounting to 145,000, the deaths were ninety-two.

It will be recollected, that at the census of 1850, the population of Kentucky was very near the same in amount with that of Massachusetts.¶

It is a little remarkable, diverse as are the climates of these States, that, with a population nearly equal, the number of fatal cases of croup should be so uniform. In 1852, according to the annual Report of the Registration of Births, Marriages, and Deaths, in Kentucky, for the above year, the deaths from croup were four hundred and sixty-one; just fifty more than occurred in Massachusetts during 1851.

In Philadelphia, the mortality from croup, in the five years preceding 1846, was seven hundred and fifty-six; or an average of one hundred and fifty-one a year,§ in a population which, at the census in 1850, amounted to 121,376.

These brief statistics will afford us some idea of the ordinary annual mortality from croup in some of the larger cities, and in different climates, and will exhibit, also, especially in comparison with London, the frightful mortality caused by the disease in New York during the last year.

It is now nearly fifty years since Napoleon issued, from the headquarters of Finkenstein, his celebrated general order—"d'ouvrir un concours sur la maladie connue sous le nom de croup," and offered a prize for the best essay on the nature of this disease, which served to awaken a new interest on the subject throughout the whole of Europe; and was the occasion of eliciting many learned, elaborate, and highly interesting works on the nature and treatment of this terrible malady. From that time to the

* London Medical Gazette, vol. x., p. 542.

† The number of the inhabitants of London, at the last census, was 2,362,236. In New York, in 1850, is was 515,547.

‡ At the census in 1850, the population of Massachusetts was 994,514. That of Boston proper, 136,881.

¶ The population of Kentucky was 985,405.

§ Dr. Meigs on the Diseases of Children, p. 84.

present, these inquiries have been pursued, in this country and in Europe, by eminent medical men, and the results published to the world ; but, has a plan of treatment yet been discovered, recommended, and adopted generally, that has had the effect to abate the severity of the disease, or, in any considerable degree, to lessen its fatality ?

In that excellent treatise on Croup, by Dr. John Ware, of Boston, the author declares, that “ the received mode of treating the disease,” which is very much the same for all varieties, “ has come down to us by a sort of tradition from our predecessors in the profession, and varies but little, if at all, from that which was originally adopted when the disease first became the object of attention. * * * In the main, emetics and bleeding, blisters and calomel, have been the principal remedies. The depleting, reducing, and perturbing method is that upon which dependence has been chiefly placed.”*

This is, indeed, true, for it must be admitted that, whilst in the management of many other diseases great improvements have been made during the last half-century, in the traditionary treatment of this affection no modifications have been generally adopted which have served to diminish, in any amount, the number of fatal cases. On the contrary, the disease is admitted, by the best and most recent authorities, to be not only progressively on the increase, but, so far uncontrolled by the ordinary therapeutic measures, as to prove fatal in nearly one half of the whole number of those who are the subjects of this affection.†

These unfortunate results, which, in the statistical records of croup, have followed the ordinary mode of treatment, will be found to have been in no degree more favorable in the history of the disease as it has occurred in our city during the past winter ; and we do not hesitate to avow our firm conviction, that the employment of the reducing and perturbing plan of treatment, a plan recently recommended by more than one eminent writer, and still employed by many practitioners, has destroyed more lives, among young children, altogether, than it has been instrumental in saving. A work, by an eminent English writer, has recently been republished in this country, which has met with a very favorable reception from the profession generally, and has received the commendation of the reviewers, in our medical journals ; and yet, the method urged by the author, in his “ Lectures on the Diseases of Infancy and Childhood,”‡ as the appropriate plan for the management of membranous croup, if fully carried out in the treatment of the disease, would prove fatal in its results, as we conscientiously

* Boston Medical and Surgical Journal, vol. xlii., p. 261.

† *Traité du Croup*, par M. Double, p. 479.

‡ *Treatise on the Diseases of Infancy and Childhood*, by Chas. West, M. D.

believe it has done, in more instances than it has proved remedial. That we may not be misunderstood in our remarks on this heroic plan of treatment recommended by Dr. West, and employed, to a great extent, by many practitioners in this country, we shall take the liberty of giving a brief statement of the therapeutic measures by him adopted.

In cases where an attack of croup "is merely apprehended, but where catarrh exists, attended with a slight, ringing cough," Dr. West recommends that the child "be confined to the bed-room, be placed on a spare diet, and should take an emetic of ipecacuanha and antimony, to be followed by some mild diaphoretic medicine containing small doses of antimonial wine."*

But, should the disease have attained its full development, before the patient comes under the notice of the physician; or, should its access be violent, a far more energetic plan of treatment is advised by Dr. West. "The abstraction of blood, and the administration of tartar emetic, are the two measures on which your main reliance must be placed; and you must bleed largely, and give tartar emetic freely, remembering that if relief do not come soon it will not come at all—that there is not danger only, but death in delay. I have never met with an exception to the rule which prescribes the free abstraction of blood in every case of severe idiopathic croup, when seen at an early period, and before the purple lips, and livid countenance, and failing pulse, announce the long continuance of a serious obstacle to the free admission of air into the lungs. Even in very young children local depletion forms, in these cases, but a poor substitute for general bleeding; for it is not merely the abstraction of a certain quantity of blood that is needed, but its removal in such a manner as most speedily to produce an effect on the system. Bleeding from the jugular vein is preferable, under these circumstances, to venesection in the arm, since the latter often fails in children under three years old; and the blood never flows so freely as when taken from the jugular vein."†

After bleeding "largely" from the arm,—or, what Dr. West considers preferable, "in very young children," from the jugular vein, *because*, in children under three years of age, "the blood flows more freely when taken from the jugular vein,"—the free administration of tartar emetic is recommended. To accomplish any real good by means of this medicine, "it must be given," says Dr. West, "in doses of an eighth, a quarter, or half a grain, every ten minutes, until vomiting is produced; and the same doses should afterwards be continued every half hour, until decided and permanent relief has been afforded." If the medicine, when administered in

* Diseases of Infancy and Childhood, by Chas. West, M. D., p. 221, Philadelphia edition.

† Ut supra, p. 221.

the same amount as at first, fails after a little to excite vomiting, it is advised by the author to increase the dose until this effect is fully produced. The antimony thus administered, is to be continued for four or six hours, when, if "no satisfactory measure of improvement should have yet appeared, local depletion may be resorted to, or possibly a repetition of general bleeding may in some cases be ventured on."*

Later in the disease, calomel, in combination with ipecacuanha, is administered every hour or two hours, "but interrupting its use at intervals in order to give an antimonial emetic;" and, finally, these active therapeutical measures above enumerated having been thoroughly tried, and tried in vain, Dr. W. advises that a totally different plan of treatment be at once adopted. "If antimony cease to vomit," he remarks, "or if it be rejected immediately, and without effort, the fluid thrown up being unmixed with phlegm or false membrane, while the temperature sinks, the lips grow more livid, the pulse more frequent and feeble, and the paroxysms of dyspnoea are undiminished in severity; or, if the respiration, though less laborious, be attended with a sibilant, instead of a stridulous sound, it is evident that by continuing the medicine we may destroy the patient, but shall fail to cure the disease."

Under such circumstances, "an attempt must be made to arouse the child from the state of collapse into which it is sinking, by placing it for a few minutes in a hot mustard bath, and emetics of the sulphate of copper should at once be administered."† If, to the therapeutical measures already enumerated, we add that of the use of mercury, which, in addition to its occasional administration at an earlier period, is to be employed at that stage of the disease when the patient "seems sinking into a state of collapse," and under these circumstances to be fully employed, by means of its internal administration, every hour, "while at the same time a drachm of strong mercurial ointment may be rubbed into the thighs every two hours," in order to bring the system as speedily as possible under the influence of mercury," together with the application of "a blister to the throat"—if these measures are included, we repeat, they constitute the plan of treatment strongly advocated by Dr. West, and employed by many practitioners, both in Europe and in this country, for the treatment of membranous croup. "Emetics and bleeding, calomel and blisters," *Medicina agens et perturbans*, the Sangrado, traditionary treatment of the last half-century! We can hardly imagine a plan more likely to prove unsuccessful, when fully carried out, than the method of which we have spoken; and if we consult the records of this plan, we shall find that, where it has been

* Op. citat, p. 222.

† Op. citat, p. 224.

adopted, this opinion of its effects will be entirely sustained by the results which have followed its employment.

A similar method, though in some degree less heroic, is advocated by Dr. Meigs, of Philadelphia, in his recent work on "The Diseases of Children."* In a "summary of the treatment," Dr. Meigs suggests "the following plan of treatment to be pursued in children about or over two years old, when we are called in good time: to take from the arm three or four ounces of blood, once, twice, or three times in two days, according to the strength of the child, and the degree and obstinacy of the fever. In both forms of the disease, emetics, and I would recommend alum in preference to any other, should be given once at least, very often twice, and, in violent cases, three or four times in the twenty-four hours, so as to produce vomiting attended with a good deal of effort. To give, at the same time, from one to two grains of calomel, with a quarter or half a grain of Dover's powder, every two hours, taking care not to give a dose for an hour before nor after the time selected for the exhibition of the emetic. In cases in which there is loud stridulous respiration, heard both in the inspiration and expiration, in which previous treatment has had no effect, and in which there is threatening of speedy death, we may give two grains of calomel every hour, until three or four doses have been taken, and direct the exhibition of an alum emetic after the last dose, or resort to tracheotomy."†

Certainly, in one respect, this "plan of treatment" is characterized by a great improvement on the wholly reducing and prostrating method ordinarily adopted;—namely, in substituting alum for antimony as the emetic in the treatment of the disease. His reasons for this are as follows: "Antimony, when resorted to as frequently in the disease as I am of the opinion emetics ought to be, is too violent in its action; it prostrates many children to a dangerous degree, and is, I fear, in some cases, itself one cause of death."‡

If, then, these positions, with regard to the generally-adopted, reducing plan of treating croup, are tenable—and in confirmation of these views we challenge inquiry into its history—is it not time for the thinking, *progressive* portion of the profession to conclude with Dr. Ware, "that the methods of treating this disease in common use, require a careful reconsideration"?

That there is a method of treating croup, which every practitioner may, if he will, adopt, and which, if promptly and appropriately employed, will arrest the disease in a very large proportion of cases, we unhesitatingly aver.

* A Practical Treatise on the Diseases of Children. By J. Forsyth Meigs, M. D., &c., second edition.

† Op. citat, p. 103.

‡ Op. citat, p. 97.

In 1848, the writer published a small treatise, "On the Pathology of Croup, and its Treatment by Topical Medications," in which the declaration was made that, "the practice of making topical application of medicinal agents into the larynges of young children, for the treatment of membranous croup, is a plan entirely practicable, safe, and, when judiciously employed, *in the highest degree efficacious*." This method of treating a disease hitherto so unmanageable, was founded upon the following propositions, which were then advanced, with regard to the pathology of the disease, namely: That the essential characteristics of true croup "consist in an inflammation of the secreting surfaces of the fauces, larynx, and trachea, which is always productive of a membranaceous or an albuminous exudation.

2. "That the membranaceous concretion, which is found coating the inflamed mucous surface of the parts in croup, is an exudation,—not from the membrane itself, but is secreted by the muciferous glands, which so abundantly stud the larynx and trachea.

3. "That the exudative inflammation commences, invariably, in the superior portion of the respiratory passages, and extends from above downwards,—never in the opposite direction."

Since the publication of the work in which this mode of treatment is advocated, the author has had the opportunity of treating many cases of croup on the plan deduced from this view of its pathology; viz., by means of topical medication,—not only in his own practice but in the practice of, and in conjunction with, other members of the medical profession; and with an amount of success that has afforded a high degree of encouragement and satisfaction.

He has also received from medical men, in different parts of the United States, as well as from numbers in Europe, the history of many cases of membranous croup, wherein topical measures, in their hands, have proved effectual in arresting the disease. In view of the great fatality, on the one hand, which constantly attends this disease, as ordinarily treated, and on the other, of the prejudice against the local treatment, which is still entertained by many, especially of the older members of the profession, the author does not feel at liberty to withhold from his professional brethren this abundant and most conclusive testimony in favor of topical medication in the treatment of croup.

It will not avail, for the cavilling opposer of this method of treating the disease, to rebut all testimony in its favor, as many in the profession, who, having always refused to try the plan, have persisted in doing,* with

* In a case of membranous croup that occurred in this city, the history of which was received from the attending physician, a prominent surgeon was called, by re-

the assertion, that the cases of croup which have recovered rapidly under local treatment "were not cases of true membranous croup, but those of a spasmodic, or catarrhal nature, such as would have recovered under almost any treatment;" for, in many instances the employment of nitrate of silver, in the treatment of croup, has been adopted with great success, by eminent practitioners, who had, previously, had extensive experience in the management of the disease, but who, before the employment of topical medication, had treated, unsuccessfully, a large number of cases by the ordinary "depressing, depleting, and disturbing remedies." This was the case, as with many others to whom we could refer, with the distinguished Dr. John Ware, of Boston, to whose experience, in the different modes of treating this disease, and the conclusions to which he has arrived, we shall now briefly allude.

It is well known to the reading members of the profession that several years ago Dr. Ware published his "Contributions to the History and Diagnosis of Croup"—a work evincing more scientific research, and containing more information with regard to the true pathology of membranous croup, than all that had been previously written in America. In these papers, Dr. Ware refers to thirty-nine cases of what he denominates membranous croup, which were noticed in his own, or in the practice of his friends. Of these cases the state of the fauces was observed in thirty-three instances, and "in thirty-two a false membrane was present; most frequently, and sometimes only, on the tonsils, sometimes on other parts also, as the palate, uvula, and pharynx. In one case no such membrane was present; but it was found to exist in the larynx after death. These thirty-three cases were treated by the ordinary therapeutic measures; and of the whole number, *three* only recovered—in thirty, the disease proved fatal. It is not at all surprising that, under these circumstances, Dr. Ware, eminent for his careful investigation and conscientious inquiry after truth, should have become "confirmed in the opinion," as he subsequently declares himself to have been, "that the methods of treating this disease, in common use, require a careful reconsideration;" nor that he should have propounded the question,—*"If the mode of treating croup commonly adopted, does no good, are we sure that it does no hurt?"*

quest of the family, in consultation. The case had advanced, until the symptoms were very urgent, and prompt measures were demanded, to save the life of the child. The physician in attendance proposed cauterization of the parts, rather than tracheotomy. The consulting surgeon positively refused to accede to the adoption of this plan, on the ground, that it was a dangerous, and, in such cases, a worthless measure. The physician, however, persisted in his proposal, and the surgeon retired. Cauterization of the larynx was then promptly, and perseveringly employed, and, by this means the life of the child was saved.

Having concluded, after the experience to which we have referred, to treat the disease "without the persevering use of the heroic remedies," Dr. Ware subsequently adopted a method in which "the treatment consisted—

1. "In the absence of all reducing, depleting, and disturbing remedies.
2. "Keeping the patient under the full influence of opium combined with calomel.
3. "Constant external application of warmth and moisture [to the neck], and of mercurial liniment, slightly stimulating.
4. "Constant inhalation of watery vapor."

In March, 1850, Dr. Ware read before the Suffolk District Medical Society "Additional Remarks on the Treatment of Croup," in which paper he refers to five cases of membranous croup, three of which were treated on the method indicated in the preceding propositions. The history of these five cases, as briefly narrated by Dr. Ware, with the conclusions to which he has arrived, we shall take the liberty of giving in his own words.

"The first case was that of a male, four years old, who was taken with membranous sore throat, accompanied by high constitutional irritation, Oct. 14, 1845. No croupy symptoms occurred till Oct. 18, when they were manifested in a perfectly distinct manner. On the 20th and 21st, patches of false membrane, with bloody sputa, were raised—and one piece of four inches in length. The raising of the latter was accompanied by a severe and suffocative paroxysm of coughing. On the 22d he died, eight days from the commencement of the disease and four from the access of croup. The suffering in this case was very considerable, but far less than I have been accustomed to witness in cases of croup treated according to the ordinary method."

"The second was that of a female, four years of age, taken with croup on the 8th of Nov., 1845. No depleting or reducing remedies were employed. Patches of membrane, and one piece of considerable size, were brought up on the 10th, and a few following days. She never suffered much, improved steadily, and on the 15th seemed well in all respects except the voice, so that on the 16th I did not see her. On the 17th there was a return of all the croupy symptoms, including the appearance of lymph upon the tonsils, and she died on the night of the 19th, eleven days after her first seizure. During no part of the disease was the suffering from dyspnoea very intense for any continued period.

"On dissection, the usual appearances were found, and in one lung the false membrane extended for some distance into the bronchi in the substance of the organ."

"The third case was a female, six years of age, who was seized with the disease Oct. 31, 1847. The onset of the disease was gradual, yet quite dis-

tinct. Nov. 2d, the symptoms had become quite severe; and Nov. 3d, there was bloody expectoration, and pieces of membrane were spit up. Pieces of membrane continued to be found in the sputa for several days, and she was very comfortable and breathed with tolerable ease, yet never losing the distinct croupy sound of respiration and voice. She retained some appetite and sat up and amused herself as usual. On the 8th, she became rapidly worse, but without distress, and died on the 9th, quite easily, ten days from the first attack of the disease.

"It will be admitted, I think, that these cases, especially the two last, exhibited certain differences from the common course of this disease, which indicated a favorable influence from difference of treatment.

"In all of them the membrane was thrown up in considerable quantities.

"In all of them the disease was attended by very much less distress than is usual in croup, and, in two, there was so decided a mitigation of symptoms following the separation of the membrane, as to lead to considerable hope of a favorable termination.

"In two, at least, the disease was prolonged to at least twice its average duration under the usual treatment.

"In the two other cases, to which reference was made, the same general course of treatment was followed, with the addition of the introduction of a sponge, wet with a solution of the nitrate of silver, into the larynx. In each of these cases the application was made as early in the disease as I became satisfied of its distinct character. It was repeated morning and evening. It decidedly gave relief to the breathing, soon after each application, and both cases ultimately recovered perfectly. For the suggestion and adoption of this valuable addition to our means of treating this formidable disease, we are indebted, as is well known, to the enterprise of Dr. Horace Green, of New York. The profession, I think, owe to him a large debt of gratitude, for the energy and perseverance manifested in the introduction of this remedy, and I am the more disposed to render this tribute to him, because so many attempts have been made to detract from his merit in relation to it.

"I am well satisfied from what I have now seen of this method of treating croup, as compared with that which has been followed for so many years, that it has the advantages which were pointed out in one of the preceding papers. It is a disease which I would treat without depletion—except, perhaps, by a few leeches—without vomiting, without purging, without blisters, without antimonials, ipecac., and all those other nauseous remedies which have been usually resorted to. I would trust to opiates, perhaps calomel, emollients, and the local application of the nitrate of silver.

"I ought to add that many of my friends in the profession have informed

me of cases in their practice, treated on these principles, which have recovered in a favorable manner.”*

Since the publication of Dr. Ware's papers, cauterization of the larynx, in the treatment of membranous croup, has been adopted by large numbers of medical men in New England, from many of whom we have received communications on this subject, expressing their full confidence in this therapeutic agent, when timely and appropriately employed in the management of croup.

Should we give the history of a tithe of these cases, which have been thus reported to us, they would occupy a much larger space than can be appropriated to this subject in the pages of the MONTHLY. In many instances—and this is the testimony of large numbers of practitioners, experienced in the disease—the morbid process has been promptly arrested, by topical medication to the surface of the tonsils and pharynx without the introduction of the sponge-probang into the larynx.

If the proposition, with regard to the pathology of the disease, be admitted, namely:—that the exudative inflammation in croup commences invariably, as a general rule, about the fauces and upper portion of the respiratory tubes, and extends from above downward, it must be apparent that no remedy can prove so effectual in arresting the morbid process as cauterization.

That this is the true pathology of the disease has been fully established, not only by many impartial observers, but also by the success which has attended the practice founded upon this view of its nature: it is, moreover, so declared to be by some of the most eminent and experienced pathologists of the present day.

“In true croup,” says Rokitansky, “which is essentially a disease of childhood, the exudative process often affects the throat and pharynx, and it extends from the epiglottis through the larynx and trachea—in some instances to the minute ramifications of the bronchial tubes—but the points it most commonly attacks are the larynx and trachea.”†

Prof. Hasse, also, whose late work on Pathological Anatomy has been translated and published by the London Sydenham Society, observes, with regard to the exudatory inflammation of croup, that its progress is invariably from above downwards, and that it never spreads in the opposite direction. “This law is so universal, that where plastic inflammation occurs in the bronchi of the adult, as the concomitant of pneumonia, it can only descend to the pulmonary cells, never mount to the larynx.”‡

* Boston Medical and Surgical Journal. Vol. xlii., pp. 267, 268.

† A Manual of Pathological Anatomy. By Karl Rokitansky, M. D. Sydenham Edition, vol. IV., pp. 20, 21.

‡ An Anatomical Description of the Diseases of the Organs of Circulation and Respiration. Sydenham So. Edition, p. 276.

Still farther to sustain these views, not only of the nature of the disease, but of the positive efficacy of topical treatment in every stage of membranous croup, we shall proceed to adduce further testimony on these most important points.

In a recent number of the "*Archives Générales de Médecine*," is an interesting memoir by M. Vouthier, on the history of croup, as it occurred in an epidemic form in *L'Hôpital des Enfants Malades de Paris*.

In this paper are the details of several well-marked cases of membranous croup, which were treated successfully by "emetics and cauterizations;" and although in these instances the argentine solution was not conveyed into the larynx, but was applied only to the fauces and pharynx, yet the patients recovered perfectly under the treatment.* Although the cases thus treated are characterized as having been very severe—"très-intense"—yet, as the treatment was early adopted, it is probable that the exudative process had not extended into the larynx; for, in the same paper is a history given, of five other cases of membranous croup, in which the disease, having reached the larynx, was not arrested by cauterizations. This measure was employed, as in the other cases, but no attempt was made to pass the instrument below the epiglottis. Tracheotomy, however, was resorted to in all these five cases, but every patient died. Efficient cauterization of the larynx, we maintain, would have saved three, if not more of these last cases.

A few weeks ago, a physician from the interior of one of our South-western States, called on us to state his experience in the treatment of croup by local measures. Two or three years before, he had passed several weeks in our city, and had then seen, for the first time, the employment of topical medication for the treatment of laryngeal and bronchial diseases. Returning to his home in the West—a region noted for the frequency with which croup occurs among children—he commenced at once to put into practice the new method of treating disease, with which he had recently become acquainted. During his previous practice, he had treated many cases of croup in the ordinary method, and the proportion of deaths, in his experience, as he stated, had been quite equal to one-third of the whole number attacked. But since the adoption of topical medication, during the two or three years after his return, some fifteen cases, he affirmed, had come under his observation, and were treated by canterization of the fauces and larynx, *every one of which recovered*. The plan adopted by this physician was the same as that, to which we shall briefly refer, at the close of this paper.

As before asserted, since the publication of our work on croup, we have received similar verbal statements, in favor of topical medication, from phy-

* *Archives Générales de Médecine*. Tome xix., art. 1st.

sicians resident in almost every State in the Union; but we have also abundant *written* testimony on this subject.

The following cases from Prof. May, of Washington, who is one of the most distinguished of American surgeons, will be read with much interest.

Washington, April 30th.

My Dear Sir :

I herewith enclose you a hasty and brief account of the cases of cynanche trachealis, in which I have used the strong solution of nitrate of silver, as recommended by you in your work on croup. The statement of these cases is not as full and satisfactory as I could have desired, owing to the partial notes hastily taken by me at the time of their occurrence; but the result, in several of them, fully sustains the great value of the local agent recommended by you, to arrest this formidable disease, and which you have been, I believe, the first to bring fully to the consideration of the profession.

I am very truly and respectfully yours,

JNO. FRED'K MAY.

Case 1st.—On the 2d Jan. I was called on to visit a son of Mr. C., of this city, aged about ten years, whom I found laboring under symptoms of croup. The child had been complaining of some uneasiness about the throat, with hoarseness and slight cough, a day or two before I saw him. At my visit, his respiration was difficult, and there was a good deal of tenderness about the tonsils and fauces, which were inflamed. There was considerable febrile action, and the little patient was very restless, and the voice quite hoarse. I directed an emetic, to be followed by an active mercurial cathartic, his bowels being constipated, and such local applications, both internal and external, as I thought most likely to give relief.

At my visit next day, I found my little patient no better, but, on the contrary, his symptoms were more unfavorable and alarming. His respiration was very difficult, and his countenance expressed great suffering and anxiety. He could not remain more than a few moments in a horizontal position, but was raising himself up continually, and stretching backwards the head to obtain relief. In a word, the difficulty of respiration was extreme. He was very hoarse, his pulse very hurried, and the throat and tonsils more inflamed than at my previous visit. The symptoms of diphtheritic croup, which had been epidemic in our city the year previous, were very decided. I at once resolved to try your method of introducing a strong solution of argent nitrat. into the larynx—everything else having been tried by me, in this disease, the year previous, not excepting tracheotomy, with but little success. The symptoms were very urgent. I felt satisfied that, unless soon relieved, the case would probably end fatally. I had no instrument sufficiently small for the object I had in view, and I therefore bent a small piece of ash stick to the proper curvature, and secured to the end of it a small piece of sponge, which I saturated thoroughly with a solution of the crystallised nitrate, of the strength of forty grs. to the ounce, and introduced it fairly into the larynx. This I repeated once or twice, on the spot, the child being forcibly held by the father. There was considerable irritation pro-

duced in the throat, for a few moments, but I believe it was caused as much by the effort, on the part of the child, to resist, as by the action of the caustic.

I remained some time, after using this remedy, and in half an hour the improvement in his breathing was manifest to all present. I left him breathing decidedly better, and when I returned in the morning I found the child had passed a quiet and comfortable night, having slept a considerable portion of it. The caustic solution was again used by me, in the same way, at this visit, his breathing having again become somewhat more difficult, and with the same improvement in his condition. My visits to him were soon after discontinued, the little patient having entirely recovered.

Case 2d.—I was requested in May, by my friend, Dr. Dawes, to visit, in consultation with him, in the country, a little girl of two years of age, the daughter of R. S. Wood, Esq.

Dr. D. had been in attendance on the child for several days, and had administered the usual remedies in her disease, which was membranous croup. Having mentioned to him, some time before, the success of the argent-nitrat. solution, in the case which I have already stated, he was desirous of having it used in the present instance.

When I saw the child the breathing was extremely difficult, and the cough tight and ringing. The little patient was much exhausted, having slept but little during the twenty-four hours which had passed. It was constantly held by the mother in her lap, or by some of her friends, as the respiration became more labored when she was placed in the bed. I at once used the solution of crystalized nitrate of silver, introducing it into the larynx, and cauterizing also the back part of the throat, freely. The solution was of the strength of fifty grs. to the ounce.

The respiration became easier before I left the house. This was apparent to all, and at the same time the pulse improved, and the skin became more natural and warm. On our return, early in the morning, we found the little patient had passed a much more comfortable night, and her breathing had decidedly improved. The caustic was, however, again used, and with an equally satisfactory result. The symptoms of the disease gradually yielded, and the child recovered. As I was not aware, or had forgotten the treatment which had been pursued, in the commencement of her case, I applied to Mr. Wood, who had formerly pursued the study of medicine, for a statement of it. I received the following reply :

“My daughter, about two years old, was attacked with croup in the month of May last. She had never suffered previously from any disease, and her constitution was good. After trying the usual domestic remedies, such as hot baths, emetics, local applications, and small doses of calomel and ipecac. frequently repeated, we were induced to send for our family physician, Dr. Dawes, who prescribed mercury to the full extent warranted by her critical situation. On the third day, the doctor proposed consulting with you, in regard to the propriety of introducing a strong solution of the nitrate of silver into the larynx. I readily gave my consent, and the operation was performed twice within twelve hours. The character of the respiration was perceptibly changed on the first trial, but we felt doubly sure of

success on its repetition; the pulse rallied, and the color of the skin became more natural.

"She is now enjoying perfect health."

Other cases have been treated by Dr. May with equal success, the history of which have been furnished by him; but, as our object has been to give the testimony of different members of the profession, from various localities, these may with propriety be omitted.

Dr. A. M. Vedder, Lecturer on Anatomy and Physiology, at Union College, has treated many cases of membranous croup by topical measures. The subjoined cases were communicated by Dr. V.

Even at the present day, there are medical men who will not admit that the passage of an armed probang into the larynx of the adult can be accomplished. Much more emphatically do these men deny the possibility of cauterizing the larynx of the young child. Within the last year, an astute professor in one of our medical colleges declared, before his class, his firm belief that the operation had not been, and never could be, performed! To such "blind guides," we would commend the interesting fact recorded in the second case reported by Dr. Vedder.

Case 1st.—A little girl, aged six years, was under treatment by a neighboring practitioner, who called me in consultation. She was first taken with what we supposed to be slight catarrhal symptoms; after a few days, the cough became stridulous, and was accompanied with some fever. These symptoms continued for three weeks, gradually increasing in severity. At this time I saw her, in the evening, and found her laboring under the characteristic symptoms of inflammatory croup; pulse rapid, and small; voice reduced to a whisper; respiration high and labored; tonsils red and inflamed, but not covered with false membrane. The attending physician had treated her with sinapisms, calomel, and tartar emetic, the latter in emetic and nauseating doses.

I suggested the topical application of nitrate of silver, which was readily acceded to. Two applications were made (℥ii. to ʒj. aqua). The probang was found covered with a thick, tenacious secretion. Respiration became somewhat more free. On the following day, there was a marked increase of all the symptoms, the silver was again applied three or four times during the day, entering the glottis each time. There was now a gradual improvement of all the symptoms, and no further applications were made. During this time, calomel and James' powder were also administered.

Case 2d. Louisa —, aged six years, general health previously good, came home from school (Nov. 1st) complaining of sore throat and cough, which was followed by vomiting. A homœopathic doctor was sent for, who treated the case as "sore throat" for five days; during this time, she was not wholly confined to the bed, and was about the house a part of the time. On the afternoon of the fourth day, she became very

hoarse, with loss of voice and decided croupy cough. Nov. 6th, Confined to bed, with considerable heat of skin and thirst. I saw the patient this day, for the first time, at 6 o'clock, P. M. Expression of countenance anxious, skin pale, voice reduced to a whisper, respiration extremely difficult, high and characteristic, pulse frequent, skin above natural temperature, cough frequent; applied the nitrate of silver with the probang, which did not produce any unpleasant symptoms, her breathing became somewhat easier; during the night her respiration became more difficult, and an emetic was administered, which was followed by some relief. Nov. 7th, A. M., Countenance still anxious, color of skin inclining to blue, respiration not much improved, almost complete aphonia,—prescribed the following powder, to be taken every three hours.

R̄. Tart. Antim., gr. $\frac{1}{8}$,
Hyd. Chlor., M. gr. $\frac{1}{4}$,
m.

Applied the silver three times during the day. Nov. 8th, No improvement, sweats now freely, and has done so all night,—on coughing expectorates a little mucus, particularly after applying the sponge, continue powders and apply cold water to the neck by means of a towel. Nov. 9th, No improvement; applied the sponge, and on removing it *the false membrane* was found attached to the sponge; and on examination found it to be a membranous tube two and a-half inches in length, and about one half the thickness of milliner's pasteboard. Her respiration became immediately easier and she continued to improve from this time, the sponge was not again applied, her cough remained "croupy" for several days longer, her voice did not become natural for more than a week after, the cold water and expectorants were continued for several days. Her health has been good since: her voice becomes hoarse, occasionally, on taking cold. I should have remarked, that at my first visit, I saw patches of lymph on the tonsillory glands. On taking charge of the patient (which I did with great reluctance), I had very little hope of a favorable termination, on account of the advanced stage of the disease, and must attribute the cure to the application of the silver.

Since treating this case I have used the silver with varying success. In two cases, in which I was called early, and in which the lymph could be seen in the upper part of the fauces, the patients recovered. In one case where I was called in consultation, the patient was in *articulo mortis*. We used the silver without any relief. In two other cases, I was called late in the disease; the nitrate of silver, and other remedies were employed; but both cases terminated fatally.

Believing, as we conscientiously do, that the reducing, perturbing, plan of treating young children for croup, is, in a large proportion of cases, not only useless, but worse than useless; and that, on the other hand, we have, in the topical treatment, when judiciously combined with mild general measures, an entirely practicable, and, in most cases, an effectual means of arresting the disease, we are solicitous to remove the objections, which, for various reasons, exist in the minds of many practitioners, and hinder

their adoption of this method. We have alluded to the dogmatic scepticism of one class, but fortunately this class of "unbelievers in the earth's rotation," is very small. Still, there is a much larger class, who, whilst they admit both the practicability and utility of the treatment, reject its employment because of the supposed difficulty of medicating the larynx in disease. This difficulty, we can assure the profession, does not exist. It is neither really difficult to accomplish, nor is it in any degree a hazardous operation. Any medical man who understands the relative anatomy of the parts, can, with very little practice, readily pass the sponge probang into the larynx; and, as benefit comes from the attempt (for the parts cauterized thereby are those first affected in croup), no time should be lost in putting the method into practice, in the onset of the disease.

During the prevalence of the disorder, last winter, when the writer was receiving calls, daily, to visit cases of croup, a request came from a physician residing in Morrisania, to meet him in consultation in a case of membranous croup. As the writer could not comply with the request, his assistant, Dr. Richards, attended the consultation; and he testifies to the fact, that the case was one exhibiting all the characteristic signs of true croup, of a very severe grade. The physician, Dr. Mann, who is an accomplished and experienced practitioner, had had many opportunities of treating croup by the ordinary method; but in this case, which we shall give, he employed, for the first time, we believe, cauterization of the larynx; and it will be seen that in his hands, the operation was both practicable and successful. So much pleased was Dr. M. with its effects that he has since placed his entire dependence, as it will be seen, on topical medication alone in the treatment of the disease.

The following communication has just been received from Dr. Mann :

Morrisania, May 12th, 1854.

DOCT. HORACE GREEN,

DEAR SIR:—The enclosed list of cases of Cynanche Trachealis, I send agreeably to your request. In none of them were any internal remedies used, not even a preparatory emetic, except—where circumstances required it—a mild cathartic. With this exception, they were all treated by topical applications exclusively.

Case 1st.—On the 7th of February last I was sent for, at 4 o'clock, A. M., to attend Alfred —, aged four years. Circumstances prevented my seeing him until 8, A. M. I then found him laboring under true membranous croup. The attack commenced on the evening of the 6th, preceded by hoarseness and slight cough. I had previously attended the patient on Jan. 8th, for pneumonia of the left lung, from which he had recovered perfectly, though still somewhat weakened by this illness. I found the little fellow struggling for breath, each effort at inspiration accompanied by a loud crowing sound, the muscles of the mouth contracting

violently at the same time, the countenance and lips livid, a cold perspiration standing in large drops upon the face, and every symptom indicating rapidly-approaching dissolution. I immediately passed through the larynx and nearly down to the bifurcation of the trachea, a sponge-armed probang containing one drachm of a sol. argent. nit. xl. grs. to $\frac{5}{2}$ j. The first effect of this application was a severe fit of coughing and choking, followed by copious vomiting, which relieved the respiration temporarily. Between this time, viz., 8 A. M. and 7 P. M., five applications were made; at about the latter hour Dr. Richards saw the patient with me. We found him sitting up, perfectly conscious and able to speak, and had taken some beef tea. Respiration entirely free from any crowing sound, which could now only be heard during a fit of coughing. Skin moist. *Feb. 8th.* Continues still improving; respiration natural; slept at intervals during the night; appetite craving; cough troublesome; slight fever; face flushed. *Feb. 9th.* No symptoms of croup remain; slight bronchitis, which yielded in a few days to mild remedies.

Case 2d.—On Feb. 11th, I was called to see Sarah —, aged two years. The patient had been suffering for two days previously, with hoarseness, and what the mother called a “sore throat,” accompanied by a loud ringing cough. On examination of the larynx and fauces, I found them considerably inflamed. The tonsils were enlarged; and, adhering to the posterior surface of these glands, I discovered a white substance lining them, and extending downward toward the larynx. The symptoms of true membranous croup were strongly marked. Skin hot and dry; face flushed; countenance expressive of anxiety and suffering; cough and respiration characteristic. I immediately made an application by means of the sponge probang to the fauces and larynx, of a sol. argent. nit. grs. lx. to $\frac{5}{2}$ j., then passed through the rima glottidis.

Feb. 12th. Patient playing about the room; respiration natural; cough troublesome, and accompanied by a free secretion of thick,ropy mucus, which the patient, on raising, immediately swallows. Detached the white substance from one tonsil, and found it to be a firm membranous exudation. This child had one other application of a weak solution, and was perfectly recovered on the third day after the first visit.

Case 3d, Feb. 25th, John —. This patient was seized with slight hoarseness toward evening, on the 24th, but awoke at about 4 o’clock, A. M., with unmistakable symptoms of croup, which were rapidly increasing in urgency and danger. Ipecac. onion draughts, and mustard, with other domestic remedies having failed to produce relief, I was summoned to the sufferer. Applied a sixty-grain sol. at once, 7 A. M. At 4 P. M. found the respiration much relieved, the patient being better in every respect. Applied a thirty-grain sol.

Feb. 26th. The little fellow saw me tying my horse, and fearing, as he expressed it, that I was going to “run the poker down his throat again,” scampered off and hid.

The above cases it gives me pleasure to submit to your perusal. I should have regarded any one of them as nearly hopeless under the old plan of treatment.

Very respectfully yours,

F. P. MANN.

Doct. Horace Green, 12 Clinton Place.

With the history of one more case, voluntarily furnished by Dr. M., an intelligent physician of a neighboring State, we shall close our selections from the mass of testimony that has been received, in favor of the plan of treatment advocated in these pages.

DEAR SIR:—

You will excuse the liberty which I assume in thus addressing you. I cannot forego the opportunity I have in expressing to you the gratitude I now feel for your kindness to me, and for the information I acquired in the short time I passed in your office, during my late visit to your city. So elated do I feel with the result of your mode of treating diseases of the air-passages, that I must trouble you to read an account of my first experience in the use of topical applications, in an interesting case of croup.

Feb. 18th, at 8 P. M., a gentleman entered my office, in some haste, and requested me to step across the street and see his child, which he feared was dying. Without ceremony or question, I accompanied him home, where I found two physicians, with some dozen, more or less, neighbors, surrounding the bed of a little fellow, six years of age, the sound of whose inspiration and expiration was to me a sure index of the nature of his disease. In the diagnosis we could not be mistaken. He was in the very last stage of membranous croup. The patient was of a bilious temperament, black hair and eyes, dark complexion, very large head, with a short and very thick neck; broad chest, and, for a boy of his age, very muscular. It was with the utmost difficulty that he could breathe, every muscle of the body seemed brought into action, at each respiration; the countenance was flushed and anxious, the lips pale and swollen, the eyes protruded, nostrils dilated, and ever and anon that cough, the sound of which you know, but which I cannot describe; pulse beyond enumeration. All these were sufficient to cause the friends and physicians, as well as myself, to believe the child to be in *articulo mortis*. I, however, proposed cauterization with the probang; the physicians, after explaining to them what I *meant*, opposed it, on the ground that it was not only perfectly useless, but that it was utterly impossible to pass it into the larynx; the which, I of course flatly denied. I then, without much regard to professional etiquette, as the case demanded action rather than ceremony, and also because I was determined, if possible, to try your plan, explained to the friends, as well as I could, the nature of what I proposed to do, the objects in view, and the probable results that might reasonably be anticipated; nor did I keep back the fact, that the child, notwithstanding, might die.

The friends immediately consented to my doing what I pleased, as the child would die without immediate relief. All the usual remedies, such as emetics, leeches, blisters, &c., had been used. I immediately made a sol. of argent.-nitrat. cryst. fifty grs. to the ounce of aqua. distil., saturated the sponge, and made the attempt to pass it into the larynx; the child struggled and I did not succeed, but what was very good, I did succeed in sponging the fauces and epiglottis. My failure, however, to pass into the larynx, was a sort of triumph to the nonbelievers. However, the child strangled, coughed, and discharged considerable ropy mucus. After a delay of some fifteen or twenty minutes, I secured the head of the child,

and made the attempt again; and what is *better*, I *succeeded well*. The little fellow strangled, coughed, and discharged a large quantity of thick ropy mucus, with patches or shreds of membrane, and in one minute was sensibly relieved. In ten minutes, the wheezing sound, in expiration, was gone. Then was my hour of triumph, and I made use of it. After waiting a half hour, I prescribed hyd. sub. mur., gr. i.; ipecac., gr. i.; opii., gr. $\frac{1}{8}$, every hour, and left for home.

It will be unnecessary to follow out the farther history of the treatment in this case, as detailed by Dr. M——. Topical, with the required general treatment, was continued for several days, and the patient recovered perfectly.

The history of these last cases have been given, not only as corroborative of the efficacy of the treatment, but to show, what has proved true in many other instances, that where intelligent medical men have made the attempt, earnestly, to medicate the larynx, their efforts have, in all cases, been successful.

It was our intention at the close of this paper to have submitted a detailed statement of the plan, both local and general, that we would advise to be pursued in the treatment of membranous croup. But the pages allotted us in the *Monthly*, have been already fully occupied. Besides, these views have been stated at length, in our work—"Observations on the Pathology of Croup, and its Treatment"—which has been several years before the medical public.* The accumulated experience furnished from

* With regard to the general treatment in the management of croup, we accord fully with Dr. Ware, in the propriety of avoiding, generally, "all reducing, depleting, and disturbing remedies." We would administer, as required, mild emetics, of ipecacuanha, or ipecac. and sulphate of zinc. Calomel alone, or in combination with Dover's powder, or opium, is frequently required, but never in *scruple doses* as it has been recommended to be given to young children, by some practitioners in this city. These remedies, together with the inhalation of the vapor of warm water, may be employed in the treatment of croup. But our main dependence, in all stages of the disease, should be on *cauterizations*. "This measure," says Prof. Wood, in his work on the "Practice of Medicine," "after an unsuccessful employment of other means, the practitioner would certainly be justified in resorting to." We would advocate its employment in the very access of the disease, as soon as the nature of the malady is ascertained. We have seen the disease repeatedly arrested in its formative stage, by a few prompt applications of the nitrate of silver to the fauces, and about the opening of the glottis.

After the inflammation has advanced, and the surfaces of the larynx have become involved in the disease, the argentine solution should not only be applied to the tonsils, and to the faucial region generally, but the applications must be extended into the laryngeal cavity.

If the exudations are not already formed into adventitious membrane, the employment of a few successive applications below the epiglottis may be sufficient to

the treatment of a large number of cases of croup, since the publication of that work, on the plan therein advocated, *without the loss of a single patient, in our own practice*, has confirmed us in the opinion of its efficacy over all other methods hitherto advanced, for the treatment of this terrible malady; and it has impressed us, with the full belief, that had the prejudice against topical medication not existed with the profession in this city—a prejudice, which we regret to add, has been excited, and fostered by some of our prominent medical men—and this method conjoined with *mild* constitutional remedies, had been generally adopted, in the treatment of those *six hundred and eighty* fatal cases of croup, which occurred during the last year, not one half of that number would have perished, at least from that disease of which they died.

arrest the plastic inflammation altogether. But even in a more advanced stage of the disease, when, from its continuance and the severity of the disease, we have reason to apprehend the formation of a false membrane, or a “tubular mould” throughout the larynx and trachea, we should not despair of removing the obstruction, or of arresting the inflammation.

When called, therefore, to a case of croup in this its second or developed stage of the disease—and unfortunately, it is not until this period of the affection that medical aid is resorted to, in a large proportion of the cases of croup—the local employment of the nitrate of silver, conjoined with other appropriate measures, should be entered upon at once.

An application may first be made to the tonsils, and about the opening of the glottis. After a delay of from fifteen minutes to an hour, the operation may be repeated, and the sponge wet with the solution should then be passed into the larynx. The cauterizations may be repeated once in two, four, or six hours, according to the effect produced and the intensity of the disease.



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